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Revision 3

National Environmental Policy Act Compliance Strategy for the Remote-Handled Low-Level Waste Disposal Project

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NOTE:
This document addresses identification and management of risk associated with a proposed onsite remote-handled low-level waste disposal facility. A new onsite facility has been identified as an alternative for providing continued remote-handled low-level waste disposal capability in support of ongoing Department of Energy missions at the INL site. However, a decision has not been made by the Department of Energy to develop a new onsite disposal facility. The decision, following all required analyses and evaluation of the impacts of all viable alternatives, will be made in accordance with the National Environmental Policy Act of 1969. Use of words indicating requirements or specifying intention (such as "shall" or "will") are used for the convenience of discussion or to indicate requirements or activities that are conditioned on a decision to develop a new onsite disposal facility. Such usage should not be construed to mean that a final selection of an alternative has been made.

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TABLES

ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOE	Department of Energy
EA	environmental assessment
EIS	environmental impact statement
FY	fiscal year
INL	Idaho National Laboratory
LLW	low-level waste
NEPA	National Environmental Policy Act
NRF	Naval Reactors Facility

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1. INTRODUCTION

The U.S. Department of Energy (DOE) needs to have disposal capability for remote-handled low-level waste (LLW) generated at the Idaho National Laboratory (INL) at the time the existing disposal facility is full or must be closed in preparation for final remediation of the INL Subsurface Disposal Area in approximately the year 2017.

1.1 Background

The INL, an 890-mi^2 (2,305-km^2) section of desert in southeast Idaho, was established in 1949 as the National Reactor Testing Station. Initially, missions at INL were development of civilian and defense nuclear reactor technologies and management of spent nuclear fuel. Today, INL is a multipurpose national laboratory delivering specialized science and engineering solutions for DOE.

Sponsorship of INL was formally transferred to the DOE Office of Nuclear Energy by Secretary of Energy Spencer Abraham in July 2002. The move to the DOE Office of Nuclear Energy and designation of INL, along with Argonne National Laboratory, as the DOE lead nuclear energy laboratories for reactor technology supports the nation's expanding nuclear energy initiatives. This places INL at the center of work to develop advanced Generation IV nuclear energy systems; nuclear energy/hydrogen coproduction technology; advanced nuclear energy fuel cycle technologies; and to provide national security answers to national infrastructure needs. In addition, INL hosts the National Nuclear Security Agency's Naval Reactors Facility. Naval Reactors Facility (NRF). NRF supports the U.S. Navy's nuclear-powered fleet through research and development of materials and equipment as assigned by the Office of the Deputy Administrator for Naval Reactors. The DOE Idaho Operations Office also is executing the Office of Environmental Management cleanup mission. As part of ongoing cleanup activities at INL, closure of the Radioactive Waste Management Complex, where radioactive waste has been disposed of at the Subsurface Disposal Area since 1952, is proceeding under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; 42 USC 9601 et seq.). The continuing nuclear mission of INL, associated ongoing and planned operations, and Naval spent fuel activities at the NRF require continued capability to appropriately dispose of remote-handled LLW. Providing continued disposal capability for remote-handled LLW supports the DOE Office of Nuclear Energy's mission "to lead the DOE investment in the development and exploration of advanced nuclear science and technology." Without established, viable remote-handled LLW disposal capability, ongoing and future nuclear energy programs at INL would be adversely impacted.

1.2 Scope

The lack of remote-handled LLW disposal capability may impede DOE's ability to initiate new programs at INL. Remote-handled LLW disposal capability also is critical to meeting the National Nuclear Security Agency's mission to "provide the United States Navy with safe, militarily effective nuclear propulsion plants and to ensure the safe and reliable operation of those plants." A reliable disposal path for remote-handled LLW generated during spent nuclear fuel handling and packaging operations is essential to the NRF's continued receipt and processing of Navy spent fuel and, therefore, to the Naval Nuclear Propulsion Program and national security (DOE 2009).

In compliance with the National Environmental Policy Act (NEPA; 42 USC §4321 et seq.), DOE's planning includes an evaluation of the impacts on the human environment for the proposed action, reasonable alternatives to the proposed action, and the no action alternative. Actions regarding disposal capability for LLW are not specifically addressed by 10 CFR 1021, "Department of Energy National Environmental Policy Act Implementing Procedures."

The impacts of onsite and offsite disposal of LLW generated at INL have been evaluated in two environmental impact statements (EISs): (1) *Programmatic Spent Nuclear Fuel (SNF) and Idaho National Engineering Laboratory (INEL) Environmental Restoration and Waste Management EIS* (DOE 1995), and (2) *Waste Management Programmatic EIS* (DOE 1997). Onsite disposal of contact and remote-handled LLW was selected in the 1995 *Record of Decision for the Spent Nuclear Fuel and Idaho National Engineering Laboratory Environmental Restoration and Waste Management EIS* (60 FR 28680), although the decision on siting and construction of a new disposal facility, if needed, was deferred to further project definition and further appropriate NEPA review.

The Record of Decision for the *Waste Management Programmatic EIS* expanded disposal options for INL-generated contact and remote-handled LLW to include Hanford and the Nevada Test Site as potential DOE disposal sites with continued onsite disposal also permissible at INL (65 FR 10061). In addition, this Record of Decision did not preclude consideration of commercial disposal facilities consistent with DOE orders and policy. It may be appropriate to evaluate these EISs to determine whether they adequately support offsite disposal of the identified waste streams. On October 30, 2009, the Environmental Protection Agency issued a notice of availability of the draft *Tank Closure and Waste Management EIS* for the Hanford Site in Richland, Washington (74 FR 56194). DOE's preferred alternative for waste management provides for disposal of offsite-generated LLW with limits on offsite waste importation until a proposed Hanford Consent Decree and Tri-Party Agreement milestone of December 31, 2022, is achieved for initial operation of the Waste Treatment Plant for tank waste.

While an earlier programmatic INL study conducted in 2006 indicated that remote-handled LLW disposed of in the Subsurface Disposal Area may meet waste acceptance criteria for offsite disposal sites, the presence of certain radionuclides and high radiation levels of some of the remote-handled LLW streams present unique challenges for shipping offsite, including packaging, shipping, and acceptance by offsite disposal sites. Therefore, preparation of an environmental assessment (EA) is recommended to evaluate the significance of the impacts of remote-handled LLW disposal on the human environment. If the EA analysis identifies any significant impacts, an EIS will be prepared. An EA determination is being prepared to formalize the decision to commence the NEPA evaluation with an EA.

This NEPA compliance strategy describes the elements of the EA and the approach for conducting the impacts identification and evaluation. It has been prepared as part of planning for acquisition of the capital assets needed to establish remote-handled LLW disposal capability for remote-handled waste generated at INL. This planning is conducted pursuant to DOE Order 413.3B, "Program and Project Management for Acquisition of Capital Assets." This order provides for progression of critical decisions to be made by DOE management as a project moves from identification of a mission need, through design and construction, and on to operational readiness. This strategy is intended to accomplish early integration of NEPA into the planning process.

2. SELECTION CRITERIA

The EA will identify criteria used to evaluate identified remote-handled LLW disposal alternatives. A range of possible alternatives exists, including use of existing and planned department assets, offsite disposal at department or commercial facilities, and development of a new onsite remote-handled LLW disposal facility. Alternatives not meeting the following evaluation criteria will be eliminated from further consideration and will not be analyzed in detail:

- Provide dependable disposal capacity in support of continued INL operations beginning in Fiscal Year (FY) 2018 and continuing for at least 20 years, with the potential for expansion to accommodate an additional 30 years
- Minimize impacts to nuclear energy and Naval Nuclear Propulsion Program missions and operations at the generating facilities
- Minimize disturbance of natural and cultural resources and other environmental impacts.

3. ALTERNATIVES IDENTIFICATION

The identification of the alternatives section of the EA will describe the alternatives for meeting the need for disposal of remote-handled LLW. Programmatic analyses conducted to support establishment of mission need have identified the following possible alternatives to provide uninterrupted remote-handled LLW disposal capability:

- Continued disposal at the Radioactive Waste Management Complex
- Disposal at the Idaho CERCLA Disposal Facility
- Interim storage
- Storage for decay
- Development of an onsite remote-handled LLW disposal facility (the proposed action)
- Offsite remote-handled LLW disposal (multiple offsite locations)
- Privatization of remote-handled LLW disposal
- No action, thereby storing remote-handled LLW at the generator facilities, pending future decisions.

From this list, a range of reasonable alternatives will be identified for further analysis and a brief discussion will be included as to why other alternatives were eliminated from detailed study.

4. AFFECTED ENVIRONMENT

The affected environment section of the EA will describe the affected environment for alternatives that meet the selection criteria. The transportation corridor for offsite shipments also will be described for the appropriate offsite alternatives that meet the selection criteria. This section will address physical, biological, and social and economic factors for alternatives that meet the selection criteria. These factors are summarized in Table 1.

Table 1. Factors to be considered when describing the affected environment.

Category	Factors to be Considered
Physical	Location, geomorphology/physiography, climate, soils, energy resources, cultural resources, water resources, air quality, noise, land use, and infrastructure
Biological	Vegetation and wildlife
Social and Economic	Demographics, economics, environmental justice, and special concerns

To the extent feasible and appropriate, existing data will be used to describe the alternatives that meet the selection criteria. Sites under consideration that are expected to meet the selection criteria have been well characterized in previous NEPA documents or similar analyses. Data on the site environmental conditions are published in annual site environmental reports for DOE facilities.

Specific locations for an onsite disposal facility will be identified through a siting study. The siting study will review and rank potential sites against technical criteria such as depth to groundwater and existence of critical habitat or cultural resources. Sites considered most suitable for disposal will be carried forward into the EA. Site-specific aspects of the affected environment will be included in the EA.

5. EXPECTED ENVIRONMENTAL IMPACTS

The environmental impacts section of the EA will analyze expected impacts from the alternatives of the proposed action, reasonable alternatives meeting the selection criteria, and the no action alternative. In accordance with current guidance and requirements, cumulative impacts, impacts from potential terrorist acts, and impacts from reasonably foreseeable accidents will be addressed in addition to impacts associated with the physical, biological, and social and economic factors identified in the affected environment section.

Data to support the impacts assessment will be obtained, as appropriate, from the existing site specific EISs (including supplement analyses) and current monitoring data. It is anticipated that environmental impacts described in the current EISs will bound any impacts from remote-handled LLW disposal; however, this assumption will be reviewed during preparation of the EA.

In addition to assessing impacts of disposal, offsite alternatives will be evaluated for the impacts of packaging and transportation of waste. The EA will draw upon the evaluation performed in the 1997 *Waste Management Programmatic EIS* (DOE 1997) for the transportation analysis. If use of commercial disposal capacity is evaluated as a reasonable alternative, the transportation impacts analyses conducted as part of the commercial facility's licensing process will provide an additional source of information.

The last part of the environmental impacts section will compare the impacts among the alternatives. This comparison will be presented in a table format that allows the reader to easily review the comparable information for each physical, biological, and social and economic factor evaluated. In summary, each alternative will be described in terms of how it meets the established evaluation criteria in relation to the other alternatives.

6. COORDINATION AND CONSULTATION

The coordination and consultation section of the EA will identify requirements and policies for consulting with Indian Tribes, state and local governments, and regulatory agencies regarding the proposed action and the EA. This section will be developed after a communications plan is prepared and implemented to meet DOE's goals for conducting public involvement and consultations on the project. It is anticipated that the Shoshone-Bannock Tribes, the State of Idaho Department of Fish and Game, and the United States Fish and Wildlife Service will be consulted. This section will report the coordination and consultation activities undertaken and the results of these activities.

7. PERMITS AND REGULATORY COMPLIANCE

The permits and regulatory compliance section of the EA will identify all permits, licenses, and regulatory requirements that would apply to the proposed action and alternatives. Applicable federal and state requirements will be addressed. Requirements for radioactive waste transportation and disposal, air quality, water quality, cultural resources, and natural resources will be included in the discussion.

8. POTENTIAL ISSUES

Issues that could arise during preparation of the EA include concerns about the impacts of the proposed action or alternatives and the potential for addition of new species to the list of threatened and endangered species.

The public may be concerned about impacts to groundwater from an onsite remote-handled LLW disposal facility. A discussion of impacts to groundwater will be included in the EA. Performance of the facility also will be evaluated in the radiological performance assessment and composite analysis required under DOE Order 435.1, "Radioactive Waste Management."

The potential exists that the sage grouse and pygmy rabbit will be listed as threatened or endangered under the Endangered Species Act (PL 93-205) during the planning process of this project. The U.S. Fish and Wildlife Service has been required to reexamine the need for this action under court orders (United States District Court 2007a and 2007b). The listing of either species could cause project delays because a biological opinion by the United States Fish and Wildlife Service would be required and possible increased project costs would be incurred due to reexamination of alternatives, siting studies, and implementation of protective measures. If either of these species was listed as threatened or endangered and it is determined that the project would have the potential to significantly impact either species, the level of NEPA analysis would be increased to an EIS. The U.S. Fish and Wildlife Service recently determined that listing of sage grouse is warranted but is precluded at this time by higher priority listing actions (United States Fish and Wildlife Service 2010). No decision has yet been made on pygmy rabbits.

The public may be concerned about transportation impacts of the offsite disposal alternative. A potential host state and its citizens also may have concerns about the environmental impacts of disposal of remote-handled LLW within their state. However, these impacts would have been considered by the public in previous EISs or similar processes related to licensing and approval of the facility, and acceptance of remote-handled LLW from INL would not be expected to be any different in scope or severity from activities previously considered.

9. SCHEDULE FOR COMPLETING THE ENVIRONMENTAL ASSESSMENT AND DECISION DOCUMENTS

A mission need statement was approved for the project on July 1, 2009 (DOE 2009). This is the first step of the DOE project management process under DOE Order 413.3B. The EA will be initiated in the third quarter of FY 2010 and is scheduled to be available for public review and comment by the fourth quarter of FY 2010. This includes the time needed to conduct outreach and consultations with the public and regulators. It is anticipated that a 30-day public comment period on the EA will follow (with a 30-day extension possible), and that, if no significant impacts are identified, a Finding of No Significant Impact should be ready for publication within 30 days after completion of the comment period. Therefore, preparation of the EA and decision document is expected to take 12 months and will be completed in the third quarter of FY 2011. This assumes that no additional data or studies are needed to prepare the EA in order to respond to public comment. If a Finding of No Significant Impact is not issued and an EIS will be prepared, it is estimated that preparation of a draft EIS will take approximately 12 additional months, followed by issuance of the draft EIS for public comment, preparation of a final EIS, and execution of a record of decision.

10. REFERENCES

10 CFR 1021, "Department of Energy National Environmental Policy Act Implementing Procedures," *Code of Federal Regulations*, Office of Federal Register.

42 USC § 4321 et seq., "National Environmental Policy Act of 1969 (NEPA)," *United States Code.*

42 USC § 9601 et seq., "Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)," *United States Code.*

60 FR 28680, 1995, "Record of Decision for the Spent Nuclear Fuel and Idaho National Engineering Laboratory Environmental Restoration and Waste Management EIS," *Federal Register.*

65 FR 10061, 2000, "Record of Decision for the Department of Energy's Waste Management Program and Disposal of Low-Level Waste and Mixed Low-Level Waste: Amendment of the Record of Decision for the Nevada Test Site," *Federal Register.*

74 FR 56194, 2009, "Environmental Impact Statements, Notice of Availability," *Federal Register.*

DOE, 1995, *Programmatic Spent Nuclear Fuel (SNF) and Idaho National Engineering Laboratory (INEL) Environmental Restoration and Waste Management EIS*, DOE/EIS-0203-F, U.S. Department of Energy, April 1995.

DOE, 1997, *Final Waste Management Programmatic Environmental Impact Statement For Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste,* DOE/EIS-0200-F, Office of Environmental Management, U.S. Department of Energy, May 1997.

DOE, 2009, *Mission Need Statement for the Idaho National Laboratory Remote-Handled Low-Level Waste Disposal Project*, DOE/ID-11364, U.S. Department of Energy, Idaho Operations Office, June 2009.

DOE Order 413.3B, "Program and Project Management for Acquisition of Capital Assets," U.S. Department of Energy.

DOE Order 435.1, "Radioactive Waste Management," U.S. Department of Energy.

PL 93-205, 1976. *Public Law*. "Endangered Species Act of 1973."

United States District Court, 2007a, Wes*tern Watersheds Project et al. v. Gale Norton and U.S. Fish and Wildlife Service* (CV-06-00127-S-EJL, D. Idaho), Judgment and Memorandum Order, September 26, 2007.

United States District Court, 2007b, *Western Watersheds Project v. U.S. Fish and Wildlife Service* (CV-06-277-E-BLW, D. Idaho), Judgment and Memorandum Decision, December 4, 2007.

United States Fish and Wildlife Service, 2010, "Endangered and Threatened Wildlife and Plants; 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered; Proposed Rule, 75 Federal Register 13909," March 23, 2010.